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Deposition Of Heavy Metals In Gomti River: A Report From Lucknow City Area

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Heavy metals are defined as metallic elements that have a relatively high density contrast to water. Heavy metals are reported to play a vital role in maintaining the body metabolism, but if present in over quantity, proven to be detrimental for living organisms. Gomti river, a crucial tributary of river Ganga, it receives huge quantities of untreated sewage, agricultural runoff, street washouts, sediments etc. Fishes are within the direct exposure with water contaminants, therefore are extensively used as laboratory model to assess the effects of heavy within the aquatic system. Present study is designed to investigate, the pattern of metals concentration in water, sediment, and three most edible fish species (*Catla catla*, *Channa punctatus*, and *Heteropneustes fossilis*) of different trophic levels, captured from Gomti (Lucknow), India was examined. For analysis of metals concentration water and sediment samples were collected from three deferent sites of Gomti river i.e. pakka pull (Harding Bridge), hanuman setu and Gomti barrage. Samples were analysed for chromium (Cr), copper (Cu), cadmium (Cd), lead (Pb), mercury(Hg), and arsenic(As) concentration. Inductively coupled plasma spectrophotometery (ICPMS) was used for estimation of heavy metal concentration and the results were given in mg/l. Results revealed the order of occurrence of heavy metals in tested samples of water and sediments was as As>Cu>Cd>Cr>Pb>Hg and Cd>As>Pb>Cu>Cr>Hg, respectively ($p<0.05$). Further analysis suggested that concentration of heavy metals was higher in sediments sample. The result showed that the liver and gills appeared to the main heavy metal storage tissue. While the muscle of fish was lower accumulation compare than gill and liver. The concentrations of the heavy metals were higher in the tissues than the recommended value. This study suggested that continuous monitoring of heavy metals in water, sediment and edible fishes of Gomti River should be aimed at to protection of ecological status of the river and its adjacent area.

Key words: Heavy metals, Gomti River, bioaccumulation